I'd numb 16463 name sami ul haq radiology section b
Course: biochemistry Program:BS(DT/RAD/MIC)
Semester: 1st Total Marks: 30
Instructor: sana khan
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Q2 (a) class monosaccharides on the basic of number of c atom along with example

Ans 2 trioses

A Torises is a monosaccharides containing three carbon atoms the general formula is c3h603.there are only torises .an aldotries and ketotries. Torieses are important in respiration namely lactic acid and pubic acid are derived from derived from aldotriose and ketotries respectively

Torises

Ttorses is a monosaccharide containing four atom the general formula is c4h804 example d erythrose 4 p is an intermediate in hexosemonophosphate shunt which is an alternative of gulose oxidation

Pentonse

A pentonse is a monosaccharide of rana and many co enzymes eg fad nad d 2 decoy is a constituent of DNA component of DNA

D lyxose is a constituent of lyxoflavin found in human heart

D arAbinose is a constituent of plant cell wall phosphate esters of d ribose and d yxlose occur as in intermediate in hmp pathway hexose is a monosaccharide containing six carbon atom the general formula is c6h120p

D galactose seldom found free in nature occur as a constituent of milk sugar lactose and in tissues as galactolipids and glycoproteins

D mannose

It is used to stamp protein by the process of glucosylation it does not occur free in nature but is widely distributed in combination as the polysaccharide mannan eg ivory nut it is also found as the constituent of glycoprotein

D fructose it is ketohexose and is commonly called the fruit sugar as it occurs in fruit it is sweet sugar sweeter than gulose and sourse

Heptose

A heptose is a monosaccharide containing seven carbon atom the general formula c7h1407 example are sedoheptulose it is keto heptose found in plant Based on the number of carbon atoms, the monosaccharides are regarded as

1) trioses (3C) for example gylceraldehydr

2) tetroses (4C) for example threose

3) pentoses (5C) for example ribose

4) hexoses (6C) eg. Glucose

5) heptoses (7C). eg. Sedoheptulose

Question 1 write down cell theory

Ans 1 the cell is the fundamental unit structure and function in living things

2 all organisation are made up of one or more cells

3 cells arise from other cells through cellular division

4 All cell are derived from previously existing cells

5 in a multicellular organism the activity of the enter organism depends on the totally activity of its independent cells

Question 5 explain digestion and absorption of corban

Ans the digestion of carbohydrates occurs briefly in mouth and largely in the intestine

Digestion in the mouth carbohydrates are the only nutrients for which the digestion begins in the mouth to a significant extent during process of masticaion salivary amylase acts on starch randomly and leaves glycosidic bonds the products formed include alpha dextrins

Digestion in the small acidic dietary contents contents of the stomach on reaching

small intestines are neutralized by bicarbonate produced by pancreas the pancreatic alpha amylase acts on starch and continues the digestion process the resultant products are dissaccharides

The final digestion of di and oligosaccarides to monosaccharide primarily occur at the mucosal linining the upper jejunum this is carried out by oligosoccharidaes and disaccairdases glucose fructose and galactose are formed

Absorption occur at brush border cells

Gluose via sodium glucose co transporter using energy

Furtose occur via facilitated diffusion without using energy

Pentose are absorbed by a process of simple diffusion

Question 3 briefly disscu the function of mocromollecules found in cell membrane

Ans carbohydrates

Carbohydrates are made up of monosaccharide and their polymers the monosaccharide bind together to form polysaccharide which are the polymers of carbohydrates the most common monosaccharide glucose which is one of the most valuable sugar for all animal and plant

The function of carbohydrates is act as an energy source for storage and structure

Carbohydrates

Carbohydrates are made up of monosaccharides (sugars), and their polymers. The monosaccharides bond together to form polysaccharides, which are the polymers of carbohydrates. The most common monosaccharide is glucose, which is one of the most valuable sugars for all animals and plants. The function of carbohydrates is to act as an energy source for storage and structure for all living things. For plants, starch is the chief energy source and cellulose is what provides structure and support. For animals, glycogen supplies energy and chitin provides the structure and support.

Lipids

Lipids come in three forms -- fats, steroids and phospholipids. The main function of these lipids is energy and insulation. Fats come in either saturated or unsaturated forms, and are insoluble and therefore, buoyant. Saturated fats are found in animals and are solids at room temperature; unsaturated fats are found in plants and are liquids or oils at room temperature. Lipids, in the form of phospholipids, are also important elements in membranes.

Proteins

Proteins are very important macromolecules; they have many levels of structure and a number of functions. Every cell in the human body contains proteins and most bodily fluids contain proteins as well. Proteins make up a large part of human skin, organs, muscles and glands. Proteins assist the body in repairing cells and making new ones, and are an important dietary and energy requirement, especially for growing adolescents and expectant mothers.

Que4 dissuss amino acid on the basis of requirement in protein systenis

Ans THE REQUIREMENT FOR AMINO ACIDS

In determining the requirement for protein, the subcommittee first considered requirements for the essential amino acids. The required amounts of the nine essential amino acids must be provided in the diet, but because cystine can replace approximately 30% of the requirement for methionine, and tyrosine about 50% of the requirement for phenylalanine, these amino acids must also be considered. The essential amino acid requirements of infants, children, men, and women were studied extensively from 1950 to 1970. Except for infants, where the criterion was growth and nitrogen accretion, the requirement was accepted to be the amount of intake needed to achieve nitrogen equilibrium in short-term studies of adults or positive balance in children